A Work Project, presented as part of the requirements for the Award of a Masters Degree in Management at NOVA – School of Business and Economics.

Exploring the Usefulness of Financial Statement Analysis

A Case Study on Brazil's Cosmetics Industry

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A Project carried out on the Financial Statement Analysis course
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Abstract

The work on hand presents a case study[1] intended for Financial Statement Analysis courses with the purpose of improving students' learning process by applying the activity and operating risk ratios as well as a break-down of return on assets (ROA) using an extension of the DuPont model studied in class on real-life examples. Additionally, the case aims at providing deeper insights into the industries studied, particularly the cosmetics industry, as well as adding value by focusing on Brazil, a so far not discussed topic in comparable case studies. Financial statements are presented as common-sized figures, to allow comparison. Moreover, additional financial ratios for the companies analyzed are provided.

Keywords: financial statement analysis, ratio analysis, cosmetics industry, Brazil

1. Introduction & Purpose of the Case Study

The Financial Statement Analysis course, taught in the Master's program of Management and Finance at Nova School of Business and Economics, pursues the objective of enabling Masters' students to read financial statements and develop a comprehension for the opportunities, usefulness and limitations of financial ratio analysis.

The purpose of this case study is to provide students with the opportunity to explore the usefulness and limitations of financial statement analysis based on real-life examples, focusing on the analysis of common-sized fundamentals as well as drivers of return on assets (ROA).[2] Furthermore, this work project aims at delivering a deeper insight into the personal goods industry, namely the cosmetics sector, by highlighting specific financial characteristics that are

[1] Heath (2015) defined a case study as "an account or description of a situation, or sequence of events, which raises issues or problems for analysis and solution".
[2] A pre-validation of this type of questioning has been conducted (see Appendix 1).

typical for this industry *vis-à-vis* other industries within the particularities of the Brazilian market.

Brazil, being the world's seventh biggest economy and counting a population of more than 200 million (World Heritage, 2016: 129-130), undeniably has significance for i.e. companies that are operating internationally, investors and business students. However, being an emerging country, Brazil is still subject to problems such as political instability, government interventions, underdeveloped capital markets and bureaucratic hurdles, among others (IMF 2012, 3; Worldbank 2016).[3] Naturally, this is reflected in companies' financial statements, thereby presenting variances to similar companies in other countries.

From an industry perspective, the focus of this case study lies on the cosmetics sector and its particularities, which are being explored through the analysis of activity ratios, operating risk and return on assets, each in comparison to a different industry in order to point out similarities and differences. Currently ranking third in global cosmetics sales and representing 1.8% of national GDP, the industry does not only occupies a key role within the Brazilian economy, but is also of high relevance to foreign investors and multinational enterprises[4] (ABIHPEC, 2015; Euromonitor International, 2016). The lack of existing case studies on financial statement analysis based in Brazil and the cosmetics industry, combined with demand for this type of literature, serves as justification for choosing this topic.[5]

The industries selected to compare to cosmetics are the following: commercial airline, telecommunications and retail (pharmaceuticals and drugstore products) within Brazil. Reasoning for this selection was that commercial airlines feature very distinctive

[3] For a more detailed summary of the Brazilian economic situation please refer to Appendices 2-6.
[4] A deeper analysis of the Brazilian cosmetics sector can be found in Part 6 (Suggested Approach to matching the companies to industries) of this work project.
[5] A detailed literary review is provided in Appendix 7 and 8; demand is founded by the "Revista Brasileira de Casos de Ensino em Administração", the Brazilian management case review database.

characteristics, which are useful in pointing out differences to the cosmetics industry and additionally easing the answering of the first question of the case (matching companies to industries based on data provided). The retail industry of pharmaceuticals and drugstore products, on the other hand, was chosen because of its similarity to the cosmetics industry (about 30% of sales are generated from personal products such as cosmetic). This allows for a closer analysis of typical characteristics in the cosmetics sector. The last industry selected to complete the analysis is telecommunications, on the one hand because it represents, like commercial airlines, distinctive characteristics that differentiate it from the personal goods sector and on the other hand, to complement the choice of airlines and achieve a balanced picture of two similar and two contrary industries.

Further factors determining the selection of industries were availability of financial reports, public listing, and publishing of audited annual reports and individual statements of the major companies operating within these industries, so that students can easily access and confirm necessary data to solve the case.

The following work consists of four parts, namely a review of the methodology (section 2), a case narrative and questions (section 3), which will be provided to the students, a suggested solution approach (section 4) as guideline for the teacher and a conclusion (section 5). Additionally, there are Appendices providing further information on literature review, background data, mentionable company specificities and teacher support slides.

2. Methodology

The data collected for the case stems from financial reports of publicly listed companies at the Brazilian stock exchange BOVESPA. Further information has been retrieved from databases such as Euromonitor and Bloomberg to verify the representativeness of the companies studied.

For theoretical background and on ratio analysis and the chosen industries, articles, working papers and books on financial statement analysis have been consulted and are suggested readings for students (see literature review).

The following companies were selected to represent their respective industries: Natura (Cosmetics), RaiaDrogasil (Retail of Pharmaceuticals and Drugstore products), GOL (Airline), Oi (Telecommunications).

In order to obtain smoother values and avoid outliers, it would have been beneficial to present data based on averages built from three or four companies in each industry. However, due to a lack of publicly listed companies, that are publishing individual financial statements and only operating within one industry, this was not feasible. Nevertheless, the companies selected all maintain a leading position in their respective market, which allows for the conclusion that they are fair representatives of their industries.

There were some limitations that came along with the choice of basing the case study in Brazil, aside from the lack of companies to calculate average ratios. Some companies (i.e. RaiaDrogasil) only publish their financial statements in English, while further information is in Portuguese; the mere collection of annual reports turned out to be more difficult than expected and the annual reports do not exactly correspond to the level of information and clarity as provided by i.e. European or U.S. companies. One major drawback was the fact that GOL, the airline company, only publishes parts of its income statement on an individual basis.[6] In order to permit a valid integrated analysis between income statement and balance sheet, the airline industry data is therefore based on consolidated instead of individual figures.[7] Lastly, all of the data presented refers to the year 2014 (as 2015 reports were not yet available for all companies).

[6] Starting from operating expenses downwards, while withholding the individual sales revenues and cost of sales.
[7] This modification is justified by the fact that about 90% of GOL's revenues are generated in Brazil (GOL 2015, 69), which leads to the assumption that the data is nonetheless reflecting the Brazilian market, and the fact the GOL is solely operating in the airline industry, thereby ensuring the data still represents this industry.

3. Case Narrative and Questions[8]

Brazil is currently undergoing the deepest recession since the beginning of records in 1991, facing substantial challenges such as a decelerating GDP growth rate, political instability, corruption, mounting inflation, commodity price drops, growing public deficits and high interest rates (Financial Times 2016). These problems are further intensified by a political crisis and the government's tendency to exercise economic interventions such as frequently changing the monetary policy and tax regulations, limiting capital flows as well as imports of goods and services and currency devaluations, among others. The devaluation of the Brazilian Real against the U.S. Dollar in recent years (see Appendix 9) represents a particular problem to companies with debt denominated in USD as it increases the amount of debt and interests to be paid (GOL 2014; Natura 2014).

The statements of financial position and income statements of four different companies, presented in common-sized figures and reporting the year 2014, are illustrated and to be analyzed (see Exhibit 1 and 2). All four companies are Brazilian companies listed at BOVESPA and maintain a leadership position in their respective market, thereby allowing for the assumption to be fairly representative of their industries.

The industries in which the chosen companies are operating are the following (listed in alphabetical order): Commercial Airline, Personal goods (Cosmetics), Retail (Pharmaceuticals and Drugstore Products) and Telecommunications. Note that the cosmetics company is using a direct sales model, where products are sold through sales consultants and via the company website. Furthermore, cosmetics and retail of drugstore products are partly overlapping

[8] This part is provided to students.

industries and thereby likely to show some similar indicators (about 30% of the Company D's sales are generated from personal goods such as cosmetics).

The four companies show distinctive characteristics, allowing for identification of the respective industry, when examining their financial statements in detail. Firms operating in different industries will typically show substantial differences in their financial statements as they are not facing the same environmental context. As an illustration, the gross sales margins of a luxury retailer will usually be considerably higher than those of most other industries, because of their substantial markup on prices.

Each firm is subject to its respective management team decisions regarding financing, investment and operating activities, however, when analyzing companies within the same industry, it becomes evident that they share some characteristics that are typical for this industry. This is due to the fact that they all operate in a similar environment and face, to some extent, the same opportunities and constraints, possibly competing for the same customers, suppliers, technologies etc.

Financial statement analysis is always comparative, meaning the ratios become useful when compared to i.e. previous years' results, and ratios of other companies or countries (Drake 2012). Although the four companies studied are major players in their markets, they are different with regards to size. Common-sized statements allow comparisons across industries and countries, as all items of the statement of financial position and income statement are expressed as percentages of total assets and net revenues, respectively, thereby disregarding the absolute size and reporting currency, reducing all firms to a uniform format (Thorp 2012).

The following case study questions aim to establish an understanding of the possibilities and limitations of financial statement and – ratio analysis across different industries.

Exhibit 1: Common-sized Statements of Financial Position[9]

Common-sized Statements of Financial Position				
Accounting Standard	BR GAAP	BR GAAP	IFRS	BR GAAP
Reporting Date	December 31, 2014			
Industry	A	B	C	D
Assets				
Cash And Cash Equivalents	1%	6%	19%	7%
Short-Term Investments	28%	0%	4%	0%
Trade Receivables	12%	4%	4%	12%
Inventories	4%	0%	1%	33%
Others	5%	11%	2%	4%
Total Current Assets	**49%**	**20%**	**30%**	**55%**
Judicial Deposits And Other Non-Current Assets	5%	31%	13%	1%
Investments	29%	38%	0%	0%
Property, Plant Equipment	10%	11%	36%	16%
Intangible	7%	0%	21%	28%
Total Non-Current Assets	**51%**	**80%**	**70%**	**45%**
Total Assets	**100%**	**100%**	**100%**	**100%**
Liabilities				
Short-Term Debt	23%	4%	11%	2%
Accounts Payable	10%	3%	18%	22%
Taxes And Other Current Liabilities	2%	6%	13%	8%
Total Current Liabilities	**43%**	**12%**	**42%**	**31%**
Long-Term Debt	32%	45%	51%	5%
Taxes And Other Non-Current Liabilities	5%	8%	10%	3%
Total Non-Current Liabilities	**37%**	**53%**	**61%**	**8%**
Total Equity	**20%**	**35%**	**-3%**	**61%**
Total Liabilities And Equity	**100%**	**100%**	**100%**	**100%**

Exhibit 2: Common-sized Income Statements

Common-sized Income Statements				
Accounting Standard	BR GAAP	BR GAAP	IFRS	BR GAAP
Reporting Period	Calendar Year 2014			
Industry	A	B	C	D
Net Revenue	**100%**	**100%**	**100%**	**100%**
Cost Of Goods / Services	37%	44%	81%	71%
Gross Profit	**63%**	**56%**	**19%**	**29%**
Operating (Expenses) Income	**44%**	**13%**	**14%**	**24%**
- Sales, Marketing And Logistics Expenses	33%	20%	9%	19%
- Freight Costs	11%	0%	0%	0%
- Administrative Expenses	11%	19%	1%	3%
- Amortization & Depreciation	1%	13%	5%	3%
Other Operating (Expenses) Income	1%	-19%	1%	0%
+ Share Of Profits Of Subisdiaries	0%	21%	0%	0%
Operating Result (Ebit)	**19%**	**43%**	**5%**	**4%**
Current Result (Ebt)	**16%**	**-1%**	**-9%**	**4%**
Income Tax And Social Contribution	-4%	1%	-2%	1%
Profit (Loss) From Continuing Operations	**11%**	**0%**	**-11%**	**3%**

Exhibit 3: Additional Information

Additional Information			
Industry	A	C	D
Inventory Turnover	13		4
Receivables Turnover	9		18
Payables Turnover	9		7
ROA	23%	5%	

Case Questions:

Question a: Using the provided financial statements, ratios and information from the case narrative, as well as personal knowledge about the presented industries (cosmetics, telecommunications, airlines and retail), match the companies to their industries. Justify your answer.

Question b: COMPANY A and COMPANY D are operating in similar industries. Analyze the efficiency in their operating cycle using the appropriate ratios. Which company seems to be more efficient? What are possible reasons for this?

Question c: Compare COMPANY A to COMPANY B with respect to their operating risk by using the appropriate ratios. Which company seems to be in a riskier position and what are possible explanations for this?

Question d: Using DuPont Analysis, comment on how the investment decision was affected by operational risk, gross sales margin and assets turnover for COMPANY A and COMPANY C. What are possible explanations for differences in these ratios?

4. Suggested Approach

Question a: identifying the industries with data provided

The process of matching the companies to the industries presented can be undertaken by analyzing the provided financial statements and ratios for major similarities/ differences between them and comparing those to industry averages from case studies, databases or personal knowledge. In order to pursue the purpose of this case study, exploring the usefulness of financial ratio analysis, as well as to deepen the understanding of industry characteristics and open the door for discussion, it is preferable for students to base their solution approach in industry research instead of merely retrieving benchmark ratios from databases.

A summarized solution featuring the four industries and corresponding companies can be found in Exhibit 4 below:

Exhibit 4: Industry Match Solution

Industry	Company	Company Name
Personal Goods (Cosmetics)	A	Natura
Telecommunications	B	Oi
Commercial Airline	C	GOL
Retail (Pharmaceuticals&Drugstore)	D	RaiaDrogasil

Cosmetics (COMPANY A):

The cosmetics industry in Brazil is characterized by a high and continuously growing demand: sales of beauty and personal care products have reached over 100 million Reais[10] in 2014, a growth of roughly 200% within the last five years, currently ranking as the world's third-largest beauty market (Euromonitor International, 2016: 4). The booming industry has attracted multinational companies and led to a significant transformation of the business environment, causing a fiercer competition and higher fragmentation of the market (Natura 2014, 13; Forbes, 2016).

In order to remain competitive, companies need to differentiate themselves by being innovative and building brand value. This can be observed by a high product turnover rate (i.e. Natura invested 2.9% of its 2013 net income in R&D and launched 179 new products) as well as high expenditures for marketing and sales. In fact, out of the four industries analyzed, cosmetics easily take first place with selling and marketing expenses amounting to 33% of net sales. These costs are also accountable for the large proportion of operating costs when compared to the other four industries (see Exhibit 2).

[10] USD/BRL average exchange rate 2014: 2.35 (Source: Oanda)

Aside from fast growth and great demand, the attractiveness of the beauty industry is also rooted in its typically high profit margins – which stems from a 60-80% markup on product costs, depending on the positioning of the company (Yahoo Finance, 2016).

Another characteristic of (fast moving) consumer goods in general and the cosmetics industry in particular is their high proportion of inventories as well as a high inventory turnover ratio, since ensuring the availability of their products to customers is within their core business. In the case of Natura, inventories of 4% of total assets are lagging behind industry average; however, from the companies analyzed it is still the second highest indicator (see Exhibit 1).

From the data provided in Exhibit 1-3 it is therefore already possible to match COMPANY A to the cosmetics industry: operating expenses (44%), marketing and sales expenditures (33%) and gross profit margin (63%) are the highest of all four industries presented. Furthermore, inventories (4%) rank second within the four industries.

Telecommunications (COMPANY B):

While the telecommunications market in developed countries is reaching a saturation state (PWC 2014), the sector presents unique growth opportunities in Brazil. Penetration rates are still below international standards, due to the geographic size and poor infrastructure in large parts of the country. The government's required approval of investments (such as the installment of antennas) and ability to change the legal and regulatory framework have been further reasons for the holdbacks in expanding the telecommunications sector. Fierce competition drives prices well below those in i.e. Europe, the United Stated and the rest of Latin America and high tax burdens (45% in mobile communications) additionally affect companies' margins and net income (Oi 2014, 19-20).

Identifying COMPANY B as the telecommunications company is in fact somewhat trickier than the other three companies, because Oi represents some deviations from industry averages in its

financial statements. Telecommunication companies usually show high proportions of fixed assets, resulting from high intangibles due to their investments in i.e. software and brand value as well as large PPEs due to networks (i.e. antennas) (Hausman 1999, 2). When examining Oi's statement of financial position, the high share of fixed assets (80% of total assets) matches the expectation for a telecommunication operator. However, when analyzing the individual components of fixed assets it becomes evident that the percentage does not stem from intangibles and PPEs (0% and 11%, respectively) but from investments (38%) and others (31% of total assets).[11] Nevertheless, it can be assumed that based on the remaining three industries and further analysis of the financial statements it is still feasible to match COMPANY B to the telecommunications industry. Other common factors of telecommunications are i.e. low variable costs, since the "product" provided to consumers is actually the service of using the company's network, and low or even non-existing inventories due to the same reasoning (Hausman 1999, 6). A high average collection period, since telecommunication customers usually have a credit period to pay their monthly bills, is also typical. With low cost of services (44% of net sales), absence of inventories (0% of total assets) and the highest ACP of all four industries (107 days) it is therefore possible to match COMPANY B to the telecommunications industry.

Commercial Airlines (COMPANY C):

The commercial airline industry features some very distinctive characteristics which will ease the process of matching the companies to industries based on the data provided and which will help students to understand the impact of the industry on a company's performance.

[11] These misleading figures are based in the fact that Oi's intangibles and PPEs are, for the most part, reported in the consolidated statement of operations whereas the data provided in the case is based on individual statements in order to reflect the Brazilian market and its particularities.

Changes in economic conditions (such as the current recession in Brazil, see case narrative) affect the airline industry more than other industries, as consumers will cut back on their spending on leisure and business travel times of crises (GOL 2014, 9-10). In addition to that, airline companies are highly vulnerable to increases in fuel prices which account for a major part of operating expenses (40% in the case of GOL) and to exchange rate fluctuations, having most of their revenues in domestic currencies while debt is usually denominated in US Dollars (GOL 2014, 12). Further characteristics are high fixed assets, featuring i.e. aircraft, maintenance equipment and airport operating licenses and high amounts of debt, which are required to finance these assets.

When analyzing COMPANY C's financial statements, the negative equity (-3% of total assets) and net loss (-11% of total sales) immediately stand out. This is the result of a 30.4% increase in average fuel prices over the past four years, combined with a 41.6% depreciation of the Brazilian Real against the US Dollar in the same period of time. The resulting escalation of operating expenses and increase in the amount of debt denominated in USD led to such negative results (GOL 2014, 12).

In summary, a net loss (-11% of total sales), negative equity (-3% of total assets), negative debt-to-equity ratio (-3096%), high fixed assets (70% of total assets) and the highest cost of services (81% of sales) of all four presented industries lead to the conclusion that it is most likely for COMPANY C to be the commercial airline company.

Further indications for this conclusion are the low share of inventories and receivables (1% and 4% of total assets, respectively) because the company is selling transportation services instead of merchandise and because flight tickets are usually paid before the service is even claimed.

Retail of Pharmaceuticals and Drugstore Products (COMPANY D):

Since reintroduction of the tax substitution regime in Sao Paulo in 2013 (Oliveira 2015; RaiaDrogasil 2014, 7), which alleviated the tax burden that had been imposed on generic drugs, the pharmaceutical retail industry has experienced an increase in sales and became one of the most attractive pharmaceutical markets worldwide (Salazar 2015). Due to its fast growth rate (see Appendix 10), the market has attracted foreign investors, and, contrary to the cosmetics market, been experiencing a consolidation phase. Key drivers of this growth are an increasing demand in generic drugs (due to an aging population), recent investments in public healthcare, and the sale of products that are not medications (i.e. personal care goods such as cosmetics).

In the case of RaiaDrogasil, these non-medication items represented 28.2% of total sales in 2014 (see Appendix 11), which is in line with the industry average of 33% (Utsumi, 2014). This overlapping in the sales of the same products consequently causes some similarities between the retail and cosmetics market, which will be analyzed in further detail in question b of this case.

Similar to the cosmetics industry, retail companies in general are characterized by a high share of inventories in their balance sheets, as they need to have sufficient merchandise on stock in order to meet customer demands. RaiaDrogasil reveals by far the highest percentage of inventories (33% of total assets) out of the four industries presented. Another typical indicator of retail business is a relatively low profit margin, which is also the case with RaiaDrogasil (29% GSM). In the pharmaceuticals sector, this is due to the high product development costs, a tough regulatory framework and the fact that it is difficult to increase margins by raising prices for moral reasons and competitiveness of the market.

Most transactions in this industry are settled with cash and cash equivalents, while stores are usually not owned but rented, so the companies do not require much debt (Hoffman 2013). This

is reflected by the comparably high share of cash (7% of total assets), as well as by the debt-to-equity ratio, which is with 65% by far the highest of the industries presented. The inventory turnover (4.27 days) could be expected to be higher. However, when considering that the products sold are predominantly pharmaceuticals, which, first of all, are not as perishable as i.e. groceries and, second of all, might be bought only occasionally but still need to be available for purchase, it appears reasonable that this ratio is below the general retail industry average of 7.27 days (based on COGS; CSI market 2016).

Based on this information (33% inventories, 29% gross sales margin, 7% cash and a debt-to-equity-ratio of 65%), it can therefore be concluded that COMPANY D is the one operating in the retail sector for pharmaceuticals and drugstore products.

The subjects addressed in each question, a table of the indicators used to identify the industries and a comparison to industry averages can be found in Appendices 12-14.

Question b: efficiency in the operating cycle of A (Natura) and D (Raia)

As the ratio inputs are already given, the main learning objective for students with this question is to understand which factors determine resemblances or differences in the operating efficiency in similar industries, namely which factors might be depending on the industry and which factors might be determined by management.

Operating efficiency ratios, also known as activity or asset utilization ratios are used to determine how efficiently a company is managing its activities and its assets in particular and give insight into a company's ongoing operational performance and how efficiently both long-term assets and working capital are managed. As efficiency is also directly impacting liquidity, some activity ratios (i.e. receivables turnover) are also useful in determining a company's liquidity (Robinson et al. 2015, 314).

The **cash conversion cycle (CCC)** or net operating cycle measures the number of days it takes a business to convert its production inputs into cash receipts and is determined by the time it takes the company on average to sell its inventory, collect receivables and meet payables. Since a shorter CCC implies a shorter time between cash outlay and cash recovery, a CCC as low as possible is desirable (Robinson 2012, 323). As shown in Exhibit 5 below, the CCC is calculated by the sum of days sales of inventories plus average collection period minus average payment period.

Exhibit 5: Activity ratios for COMPANY A and D

Financial Ratio	Calculation	Cosmetics A	Retail D
Days Sales Inventories	$\frac{\text{Average Inventory}}{\frac{\text{COGS}}{365}} = \frac{365}{\text{Inventory Turnover}}$	28	91
Av. Collection Period	$\frac{\text{Av. Accounts Receivable}}{\text{Sales per day}} = \frac{365}{\text{Receivables Turnover}}$	41	20
Av. Payment Period	$\frac{\text{Av. Payment Period}}{\text{Sales per day}} = \frac{365}{\text{Payables Turnover}}$	41	52
Cash Conversion Cycle	DSI + ACP - APP	28	59

An analysis of the individual components of the CCC provides a deeper insight into the companies' efficiency of its operating cycle.

The first component, **days sales of inventory (DSI)** is a measure of how long it takes a company to convert its inventories into sales. It can be stated that a shorter (lower) DSI is preferable; however, there is no ultimate target value since the ideal DSI differs from industry to industry. Naturally, the DSI of fast-moving or perishable product companies such as supermarkets will be lower than that of slow-moving, non-perishable product companies such as aircraft.

The DSI for COMPANY A (Natura) and D (Raia Drogasil) can be calculated using the data provided as shown in Exhibit 3 and delivers values of 28 and 91 for COMPANY A and COMPANY D, respectively. This suggests that COMPANY A, the cosmetics company, is

about three times more efficient in converting inventories into sales than COMPANY D in the pharmacy and drugstore retail business.

Possible explanations for this could be that Natura has been actively working on improving its inventory management by decentralizing and optimizing distribution centers and implementing new demand planning systems (Natura 2014, 63). Furthermore, cosmetics are easier to forecast than pharmaceuticals, because they are subject to a more stable consumption pattern. With pharmaceuticals accounting for about 70% of RaiaDrogasil's sales (see Appendix 11) it is fair to assume that these products also representing the majority of the company's inventory but follow a different consumption pattern than cosmetics. For example, there might be consumption peaks due to epidemic outbreaks (i.e. flu), which do not follow a planning cycle as the Christmas and Easter sales of cosmetics. Pin addition, there are medicaments that are only purchased occasionally, yet they must always be on stock.

The second component, the **average collection period (ACP)** measures the approximate time it takes a company to collect its payments from sales on credit. A lower ACP is generally preferable as it signifies a more efficient trade credit management and shorter cash outlay by the company. Since a low ACP implies a prompt payment by debtors, it is also an indicator of their liquidity (Kahn 2008, 69).

Using the ACP formula presented above for COMPANY A and COMPANY D results in 41 and 20 days, respectively (see Exhibit 5), meaning that COMPANY D is twice as efficient as COMPANY A in collecting its receivables. Interestingly, both companies are active in similar industries and have the same percentage of trade receivables to total assets (see Exhibit 1). The difference in ACP is therefore likely to be attributable to company specific characteristics, such as the fact that COMPANY A is not selling its products in physical stores but pursuing a direct sales model in which sales consultants buy products from the company and resell those to consumers on a credit of 21-60 days (Natura 2016). Contrarily, COMPANY D's consumers

typically pay at the moment of purchase in the pharmacy, except for prescription drugs, which are paid by health insurance.

The **average payment period (APP)**, calculated as shown in Exhibit 5, is an indicator of a company's performance in paying their suppliers.

A low APP can be an indication of a company taking full advantage of their credit terms, such as early payment discounts, and demonstrates financial health as the company is able to meet its obligations in due time. On the other hand, a high APP can either be an indicator of creditworthiness, good negation skills with suppliers or lack of ability to settle outstanding payments on time. In order to be properly interpreted, the APP should therefore be compared to a company's credit terms (Kahn 2008, 69). However, this information was not available for the selected companies.

With 41 vs 52 days, Exhibit 5 shows that the APP of COMPANY A is 11 days shorter than COMPANY D's which, since the credit terms are unknown, could be due to a number of reasons. Again, both companies are operating in similar industries, where both maintain a leadership position and should therefore have similar bargaining power, being perceived as similarly trustworthy and stable to creditors. It is, however, worth noting that COMPANY D has a higher percentage of payables than COMPANY A (22% vs 10%, respectively) and an analysis of both companies' liquidity situation shows that COMPANY D in fact does not dispose of sufficient current assets to meet its current obligations without selling its inventories. These two factors combined allow for the assumption that COMPANY D's higher APP is not due to favorable credit terms but a lack of ability to settle payable in due time.

In conclusion, COMPANY A (Natura) shows with 28 days a more favorable position regarding the CCC than COMPANY D (Raia) with 59 days and is therefore more efficient in its operating activity.

Question c: operating risk of A (Natura) and B (Oi)

The operational activities constitute the core business activities of a company, and as such can be considered the main source of revenue of an organization. The associated operational risk is defined as "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems, or from external events" (Basel Committee 2001, 6) and is also often described as human risk. Three different ratios can be calculated to illustrate a company's vulnerability to failure in the operating activity, namely the break-even-point, margin of safety and degree of operating leverage. For a summarizing table including all ratios and results for COMPANY A (Natura) and B (Oi), please refer to Appendix 15.

The **break-even point (BEP)** indicates the number of units that need to be sold to cover a company's fixed costs and thus, to result in an operating income equal to zero (Sahaf 2000, 245). Based on the data provided, the BEP can only be calculated as percentage of sales by dividing fixed costs by gross sales margin. Fixed costs are not explicitly mentioned in the case, which opens the door for students to discuss. In the case of Natura, a split of operating costs by nature (see Appendix 16) reveals that 11% of Marketing, Selling and Logistics expenses are caused by freight costs, which can be categorized as variable or fixed costs.[12] In the following, freight is considered a fixed cost, but both possible calculations are illustrated in Appendix 16.

Furthermore, the nature of *other operating income (expenses)* could not be identified based on the data published by Natura and Oi and is for simplicity reasons assumed to be fixed. This is justified by the fact that these costs only account for 1% and 5% of net sales, respectively, therefore not having a major impact on the result, irrespective of their nature.

[12] Being classified as selling expense identifies these costs as *transportation-out* costs, meaning they are caused when shipping finished goods to customers and are therefore not directly depending on production volume.

As visible in Appendix 15, BEP is already reached at 23% of sales in telecommunications, whereas in cosmetics 70% of actual sales are necessary to cover fixed costs. This means that the cosmetics industry is subject to a significantly higher operating risk because already a small drop in sales revenues pushes to operating income closer to zero. Not only do cosmetics carry comparably low manufacturing costs (COGS are with 37% of sales by far the lowest of all four industries, see Exhibit 2), it is also an industry where a high markup is typical. This means, however, that the greater proportion of costs are fixed costs, leaving the company vulnerable to fluctuations in demand. When examining Exhibit 2, it becomes evident that the company's fixed costs are mostly attributable to marketing and sales costs, which makes sense as these measures are needed to push the products into a highly segmented and competitive market (Euromonitor International 2015, 2).

As counterpart to the BEP, it is possible to calculate the **margin of safety** (BEP – Actual Sales), as shown in Appendix 15. The lower the margin of safety, the higher the operating risk, since the company can afford less sales declines before eliminating its operating profit. As already seen in the BEP analysis, COMPANY A (Natura) shows with a margin of safety of 30% a much riskier position than COMPANY B (Oi) with 77%.

The **degree of operating leverage (DOL)** measures the impact a change in sales has on net operating income and is calculated by (Gross sales margin / EBIT). The higher the DOL, the greater the effect of a change in sales on profits (Hansen et al. 2009, 607). As illustrated in Appendix 11, the DOL for cosmetics and telecommunications is 331% and 130%, respectively. This means, a decrease in sales by 1% will reduce the operating profit by 3.31% in the cosmetics industry while in telecommunications, the same percentage in change only results in a 1.3% decrease in EBIT. Not surprisingly, these figures are in line with the BEP result above – since Natura has an about three times higher proportion of fixed costs than Oi, its gross sales margin is about three times more vulnerable to a change in sales.

Question d: Return on Assets of A (NATURA) AND B (GOL)

The return on assets before taxes (ROA) is an indicator of a company's profitability relative to its total assets and gives insight into how efficiently assets are used to generate earnings. ROA is calculated by dividing net income over average total assets. Since this ratio is using combined data from the statement of operations (end-of-year values) and from the income statement (periodic revenues and expenses), average total assets (current year + previous values divided by two) are used. Using the DuPont model,[13] the indicator can be broken down into three ratios, which allow for a deeper analysis on how operational risk, profitability and efficiency are driving ROA. Since all three of these factors are concerning income statement lines above the EBIT, it can also be stated that these ratios are measures of, and affected by, a company's investment decision.

As the ROA is already given (see Exhibit 3) and return on sales and (EBIT/GSM) can be calculated from the provided income statement (see Exhibit 2), it is possible to calculate the asset turnover without knowing the absolute values for sales and average total assets. This can be achieved by changing the ROA breakdown to:[14]

$$ROA_{BT} = \frac{EBIT}{GSM} * \frac{GSM}{Sales} * \frac{Sales}{Assets} => \frac{ROA_{BT}}{\frac{EBIT}{GSM} * \frac{GSM}{Sales}} = \frac{Sales}{Assets}$$

The operating risk (EBIT/GSM) illustrates how much fixed costs impact a company's operating profit. The lower the ratio, the higher the operating risk since this means that fixed costs have a high impact on the business. As already analyzed in the previous questions, COMPANY A has a comparably high share of fixed costs due to the necessary expenditures in sales and marketing within the cosmetics industry. On the contrary, COMPANY C's costs are

[13] The original DuPont model (F. Brown, 1914), breaks ROA only into two parts. For the purpose of this case study, ROA will be broken down into three parts to allow for a deeper analysis.
[14] A table showing the data input and ROA calculations for COMPANY A and C is provided in Appendix 17.

predominantly variable costs such as aircraft fuel, which explains the results of 30% and 26%, respectively.

The return on sales (ROS) provides insight into how much profit is being generated per monetary unit of sales. Therefore, a high ROS would be desirable, but should be compared to other companies in the same industry and should also be analyzed over a period of time. In the case of Natura, the ROS amounts to 63%, which means that for 100 RS of sales, 63 RS can be retained within the company to cover fixed costs, financial expenses and income taxes. For GOL on the other hand, the ROS amounts to only 19%, which is likely to be rooted in the industry's low profitability in general. As already explored in question 1 of this case, the airline industry is characterized by fierce competition and high costs of services whereas the companies in the cosmetics industry are in the comfortable position of being able to use markups of up to 80%, which can explain the differences in both company's returns on sales.

Lastly, the **total assets turnover** indicates how efficiently a company is in deploying its assets or, in other words, the amount of sales generated per monetary unit of assets. As with ROS, a high value is generally desirable but highly depending on the industry. The total assets turnover for COMPANY A is 119%, meaning that for each Real invested in assets, the company is generating 1.19 Reais in sales. The retail industry is one of the most efficient ones with regards to asset turnover (average of 2.05 in 2014), based on their comparably low asset base combined with high sales volumes (CSI Market data 2015). Even though Natura is not a traditional retailer in using a direct sales model with sales consultants, the reasoning of low asset base and high sales volume can also be applied here. Contrary, since the airline industry is much more capital-intensive, which means it takes more time to turn assets over, it can be expected for GOL to show a lower assets turnover than Natura which is in fact the case (98% vs. 119%).

In conclusion, showing better results in all three drivers of the ROA, Natura is almost five times more efficient in using its assets to generate earnings than GOL (ROA of 23 vs. 5). GOL could

increase its ROA by three types of decisions: reduce its operating risk (lower fix costs), increase its profitability (higher ROS) or increase its efficiency (higher assets turnover).

5. Conclusion

The purpose of this work project was to support students in applying the theoretical knowledge acquired in class on real-life examples, thereby deepening their understanding of the topic. The practical application of ratio analysis combined with industry research and interpretation of results aims at illustrating the similarities and differences between the presented industries, as well as demonstrating the usefulness and limitations of this kind of analysis.

While conducting research on the topic, a lack of comparable studies despite its relevance for companies, investors and students were detected, what served as justification to pursue this subject as work project. Additional to case narrative and case questions, a suggested solution approach and further support materials are included in the case. Included in the case narrative are common-sized financial statements and selected financial ratios of the companies studied.

Looking forward, similar case studies can be written, focusing on other Latin American countries, different industries, other ratios (i.e. financing decision and its drivers) or by studying variations over a longer period of time.

Concluding, the present case study produced new insights on factors influencing the investment decision of Brazilian companies in the personal goods, commercial airline, telecommunications and retail industry. It is hoped that combined with theory discussed in class, it can provide added value to student's learning progress and understanding of financial statement analysis.

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Appendices:

Appendix 1: Case Study Question Validation

The Financial Statement Analysis course is currently part of the curricula of Pre-Experience Masters programs at Nova School of Business and Economics. It has been offered as an elective course twice in each academic year in the spring and fall semesters. This course was used to test the preliminary results of this case study. The supervisor of this research had been the only responsible for this course in the past semesters of the years 2010 to 2015.

A pre-validation of questions similar to b), c), and d) of the case study was conducted in three different semesters, with students who attended the course at Nova School of Business and Economics in the Financial Statements Analysis. Question a) is popular in case studies of financial statement analysis.

In total, there were 166 students from 13 nationalities: 54 students in the spring semester 2015; 53 students in the fall semester 2014 and 59 students in the spring 2014. However, these questions were limited to the telecommunications industry, and focusing on a comparison between two countries (Brazil and Portugal), whereas this case study is focusing on the cosmetics industry and Brazil, and is furthermore differentiated by discussing the investing decision and return on assets breakdown. The case study can be used in different levels, undergraduate, master, or MBA programs answers depth should be adapted accordingly.

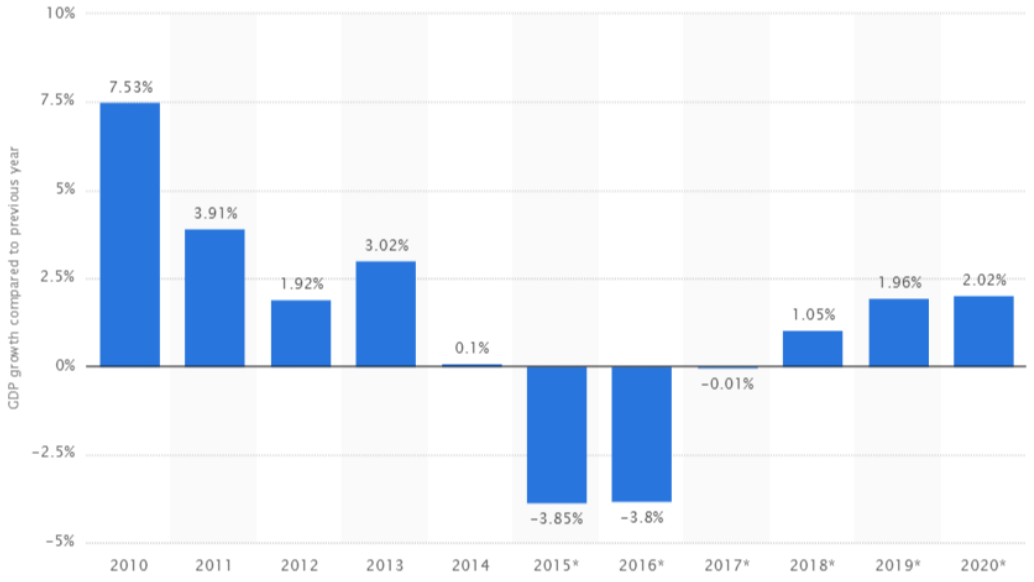
Appendix 2: Economic Overview Brazil

Over the last decade, Brazil has experienced a remarkable progress in both economic and social terms. This was marked by a significant drop in inequality (measured by a 11% decrease of the Gini coefficient[15] to a value of 0.515), raising income levels of the poorest 40% of the population (7.1% increase in real terms over the period from 2003 to 2014) and consequently, 29 million people being lifted out of poverty (Worldbank, 2016).

However, Brazil is currently undergoing the deepest recession since the beginning of records in 1991, putting a hold to the reduction of poverty and inequality (Financial Times 2016). Despite being by far the biggest economy in Latin America, Brazil is currently ranking second to last regarding performance in that region. Some of the country's biggest concerns right now are the decelerating GDP growth rate, political instability, corruption, mounting inflation, commodity price drops, growing public deficits and high interest rates (see Appendices 4-7). The political crisis in addition to the economic crisis have led to a serious deterioration of confidence amongst consumers and investors, heightened volatility in the Brazilian securities market and created an unstable and difficult business environment for domestic and foreign companies (Worldbank, 2016; GOL, 2014, Oi S.A., 2014, Natura, 2014).

[15] The *Gini coefficient* is a measure of inequality in a population and ranges from a minimum value of zero, representing perfect equality, to a maximum value of one and is a summary statistic of the *Lorenz curve* (Darmgaard and Weiner, 2000).

Appendix 3: Brazil: Growth rate of the real gross domestic product (GDP) from 2010 to 2020 (compared to the previous year)



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Additional Information:
Brazil; IMF; 2010 to 2014

Source:
IMF

Appendix 4: Brazil Inflation rate from 2011-2016 as opposed to target value of 4.5%

Appendix 5: Brazil Interest Rates from 2006-2016

Appendix 6: Brazil: Government Debt to GDP from 2006 to 2015

In order to ensure the relevance of this case study, the main literature review was conducted on existing case studies covering the topic discussed. For this purpose, the Harvard Business Review (HBR)[16], Social Science Research Network (SSRN)[17] and The Case Center[18] databases were used, as these are global, highly renowned databases for managerial case studies, as well as Casos Getulio Vargas[19] for case studies based in Brazil.

The keywords *financial statement analysis* and *ratio analysis* were used to search the databases and some filters were applied to find relevant existing case studies.

For HBR, the filters *case study* and *finance and accounting* were applied which resulted in 302 and 274 matches for both keywords, respectively. Furthermore, the search was narrowed down to case studies published no less than 24 months ago which resulted in 22 and 24 matches, respectively.

For SSRN, only the filter *case study* was used and produced 36 and 42 matches, respectively, whereof seven and 13 were published within the last 24 months (2014-2016).

Lastly, the Case Center database, also filtered for case studies, produced 16 results for *financial statement analysis* and four results for *financial ratios*, with two and nonw case studies, respectively, being published within the last 24 months.

Summing up, there were a total of 72 case studies on the topics financial statement analysis and / or financial ratios published within the last two years. However, the majority of these cases (78%) were focused on companies in the United States and Canada with the remaining 22% of

[16] https://hbr.org/
[17] http://www.ssrn.com/en/
[18] http://www.thecasecentre.org/
[19] http://bibliotecadigital.fgv.br/ojs/index.php/gvcasos/index

cases predominantly covering Asian countries. None of the case studies found dealt with the analysis of Brazilian companies.

Appendix 2 below shows an even further aggregated overview of the existing cases – using the filters described above, the case studies are organized by their topic of discussion (matching industries based on key financial ratios, investment decision (ROA), financing decision (ROE) and two or more of these categories previously mentioned). This table illustrates that the majority of case studies found (46 out of 72) is not focusing on the analysis of income statement and balance sheet but mostly on cash flow statement analysis within the scope of company valuation.

Appendix 8: Summary of existing Case Studies by Database and Topic

		Topic				
Database	**Keyword**	Identifying key financial ratios for different industries	Investment decision (ROA)	Financing decision (ROE)	at least two of the topics	**Total**
HBR	Financial Statement Analysis	1	3	1	1	**6**
	Ratio Analysis	1	2	0	1	**4**
SSRN	Financial Statement Analysis	0	0	1	0	**1**
	Ratio Analysis	0	0	0	3	**3**
The Case Center	Financial Statement Analysis	1	4	2	2	**9**
	Ratio Analysis	0	0	0	3	**3**
	Total	**3**	**9**	**4**	**10**	**26**

Therefore, it can be concluded that there is a lack of existing case studies on financial statement analysis of Brazilian companies, making this thesis relevant in exploring the topic and adding value to the existing range of literature.

Appendix 9: Exchange rate vs U.S. Dollar from 2010-2015

Year	Period-End	Average for Period (1)	Low	High
		(R$ per US$)		
2010	1.666	1.759	1.655	1.881
2011	1.876	1.675	1.535	1.902
2012	2.044	1.955	1.702	2.112
2013	2.343	2.161	1.953	2.446
2014	2.656	2.353	2.197	2.740
2015 (through April 27, 2015)	2.924	2.912	2.575	3.268

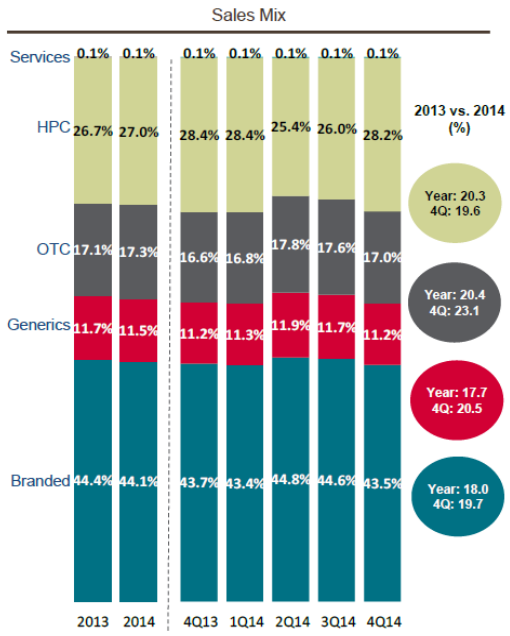
Source: GOL Annual Report, 2014:7.

Appendix 10: Sales of Consumer Health by Category: % Value Growth 2010-2015

% current value growth	2014/15	2010-15 CAGR	2010/15 Total
OTC	8.8	11.4	71.6
Sports Nutrition	15.0	17.6	124.8
Vitamins and Dietary Supplements	11.4	11.4	71.7
Weight Management	8.6	10.0	60.9
Herbal/Traditional Products	6.8	9.5	57.7
Allergy Care	7.0	11.5	72.4
Paediatric Consumer Health	9.1	11.1	69.3
Consumer Health	9.5	11.5	72.4

Source: Euromonitor International, 2016.

Appendix 11: Sales Mix RaiaDrogasil 2014



Source: RaiaDrogasil Annual Report 2014, 7.

Appendix 12: Summary of Subjects addressed in each Question

Question	Subjects addressed
a	**Industries:** Personal Goods (Cosmetics), Telecommunications, Commercial Airline, Retail (Pharmaceuticals and Drugstore Products). **Subject:** Match companies' fundamentals with industries analysing their common-sized statements and financial ratios.
b	**Industries:** Personal Goods (Cosmetics), Retail (Pharmaceuticals and Drugstore Products). **Subject**: Determine resemblances or differences in the operating efficiency of two companies in similar industries. **Ratios:** Cash Conversion Cycle, Days Sales Inventories, Average Collection Period, Average Payment Period.
c	**Industries:** Personal Goods (Cosmetics), Telecommunications. **Subject:** Industries' similarities and differences regarding the operating risk. **Ratios:** Break-even point (as % of Sales), Margin of Safety, Degree of Operating Leverage.
d	**Industries:** Personal Goods (Cosmetics), Commercial Airline. **Subject:** Industries' similarities and differences regarding profitability relative to total assets (Break-down of DuPont Model). **Ratios:** Return on Assets, Return on Sales, Total Assets Turnover, Operating Risk.

Appendix 13: Summarizing table of main indicators used to identify the industries

Conclusions from data provided					
Financial Data		Cosmetics	Telecommunications	Commercial Airline	Retail (Pharmaceuticals &Drugstore)
		A	B	C	D
Assets	Cash	1%	6%	19%	7%
	Inventories	4%	0%	1%	33%
	Receivables	12%	4%	4%	12%
	Total Current Assets	49%	20%	30%	55%
	Property, Plant Equipment	10%	11%	36%	16%
	Total Fixed Assets	51%	80%	70%	45%
Results	Cost of Goods / Services	37%	44%	81%	71%
	Gross Sales Margin	63%	56%	19%	29%
	Operating expenses	44%	13%	14%	24%
	Sales & Marketing expenses	33%	20%	9%	19%
	Profit/Loss from contin. operations	11%	0%	-11%	3%
Ratios	Inventory turnover	13,05	104,74	63,69	4,27
	Debt-to-Equity	403%	187%	-3096%	65%
	ACP	41	107	12	20

Appendix 14: Comparison of fundamentals and ratios discussed to the respective industry's averages

Industry Averages								
	Cosmetics	Natura (A)	Telco	Oi (B)	Airlines	GOL (C)	Retail	Raia (D)
Financial Ratios								
Days Sales Inventory	156,93	28,08	23,03	3,48	7,61	5,73	74,55	91,25
Average Collection Period	45,77	40,56	57,53	106,82	10,09	12,28	35,43	20,28
Average Payment Period	98,42	40,56	161,55	194,91	109,44	78,43	56,76	52,14
CCC	106,51	28,08	-41,40	-84,61	-10,36	-60,42	52,62	59,38
Degree of Operating Leverage	-2,35	3,31	5,13	1,30	10,26	-0,53	143,75	1,02
ROA	2,42	1,19	3,68	0,14	4,10	0,98	1,93	1,93
Balance Sheet Data								
Cash and Cash Equivalents	8%	1%	11%	6%	10%	19%	4%	7%
Inventories	10%	4%	2%	0%	1%	1%	35%	33%
Current Assets	38%	49%	27%	20%	27%	30%	63%	55%
Property, Plant Equipment	14%	10%	25%	11%	62%	36%	14%	16%
Total Non-current Assets	62%	51%	73%	80%	73%	70%	37%	45%
Total assets	100%	100%	100%	100%	100%	100%	100%	100%
Income Statement Data								
Sales	100%	100%	100%	100%	100%	100%	100%	100%
COGS	10%	37%	19%	44%	6%	81%	20%	71%
GSM	68%	63%	51%	56%	16%	19%	22%	29%
Operating Expenditures	56%	44%	32%	13%	80%	14%	23%	24%
Net Income	9%	11%	4%	0%	0%	-11%	0%	3%

Source: Bloomberg

Appendix 15: Operating risk ratios, calculations and results for COMPANY A and B

Financial Ratio	Calculation	Cosmetics A	Cosmetics Freight as variable cost	Telco B
Break-even point % of Sales	Fixed Costs / Gross Sales Margin	70%	48%	23%
Margin of Safety	Actual Sales - BEP	30%	52%	77%
Degree of Operating leverage	Gross Sales Margin / EBIT	3,31	3,07	1,30

Appendix 16: Natura Operating Expenses by Nature, 2014

	Company
	2014
Cost of sales	2,377,727
Raw material/packaging Material	2,377,727
Workforce	-
Depreciation and amortization	-
Others	-
Marketing and selling expenses	2,076,516
Freight	294,152
Marketing, sales force and other sales expenses	1,759,703
Depreciation and amortization	22,661
General and administrative expenses	785,107
Development in Inovation	-
Other administrative expenditure	723,670
Depreciation and amortization	61,437
Total	5,239,350

Source: Natura, 2014: 76-77.

Appendix 17: Asset turnover calculcation for Compay A and C

Financial Ratio	Company A		Company C	
	Calculation	Result	Calculation	Result
Return on Sales	$\frac{GSM}{Sales} = \frac{63\%}{100\%}$	63%	$\frac{GSM}{Sales} = \frac{19\%}{100\%}$	19%
Effect of fixed costs	$\frac{EBIT}{GSM} = \frac{19\%}{63\%}$	30%	$= \frac{5\%}{19\%}$	26%
ROA	given	23%	given	5%
Asset turnover	$= \frac{ROA}{(Return\ on\ Sales * EBIT/GSM} = \frac{23\%}{(63\% * 30\%)}$	**119%**	$= \frac{ROA}{(Return\ on\ Sales * EBIT/GSM} = \frac{5\%}{(19\% * 26\%)}$	**98%**

Teaching methodology:

This case study is intended to be solved by groups of students, in a time frame of one to two weeks. Each group should consist of three to five students and diversity, namely with regards to genre, nationality, and educational background among the group members is encouraged in order to broaden the discussion among students.

The groups are expected to solve the case together and prepare a powerpoint presentation of their results. Furthermore, a written report and executive summary are to be handed in with the professor.

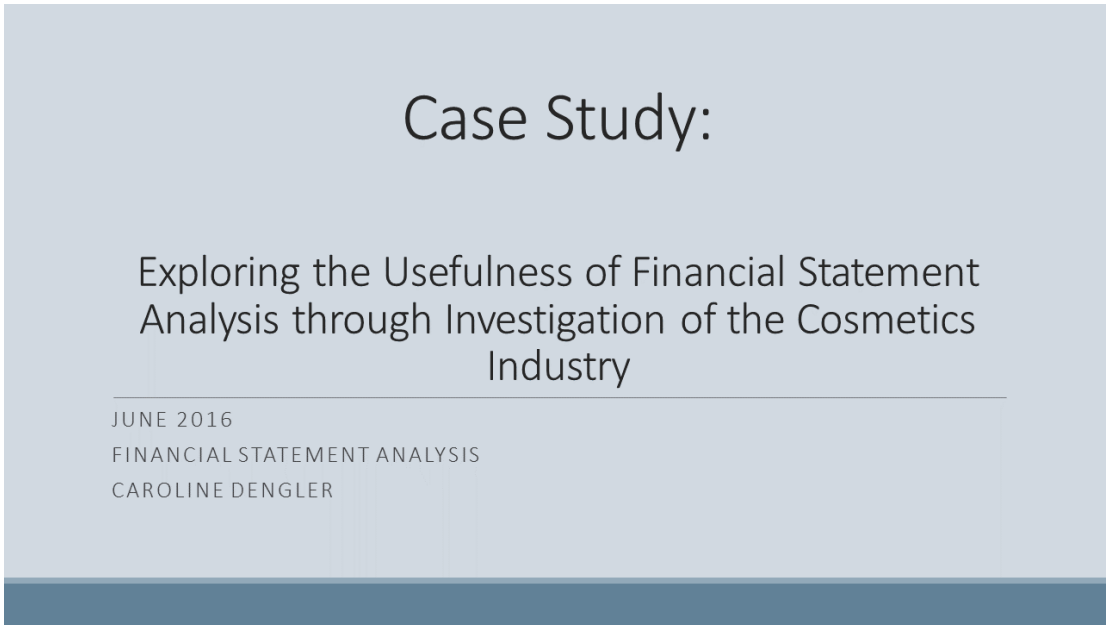
In order to optimize the learning process, the case should be addressed in a 90-minute class session, including an active discussion, among students as well as with the instructor.

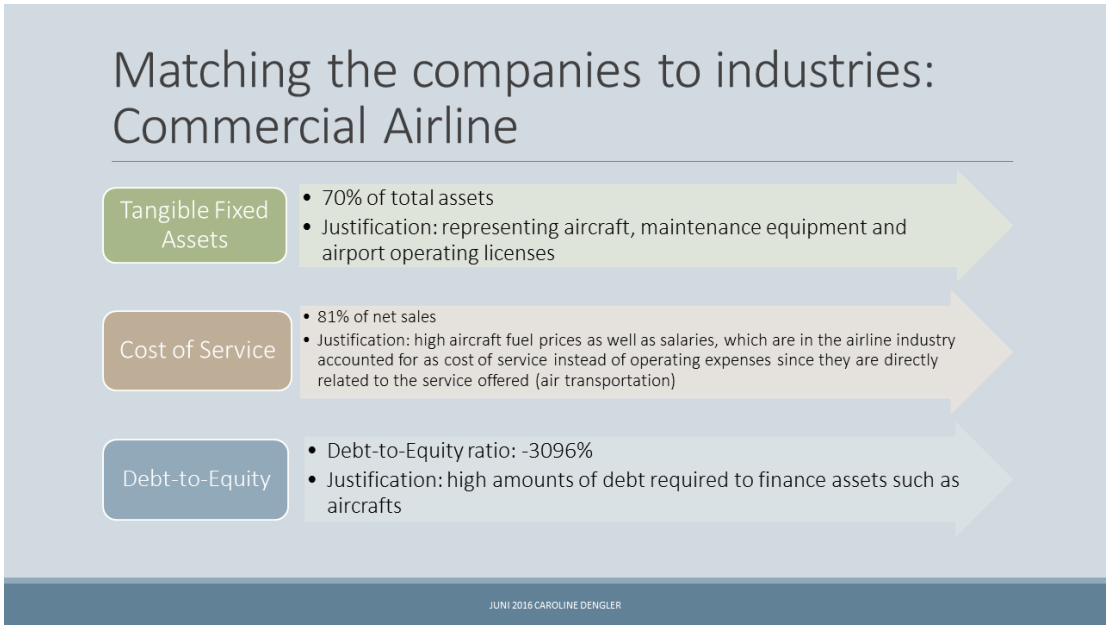
Suggested grading critera:

The following table suggests items to grade for each question and a proposal of how to grade them, assuming a scale from zero to 20.

Criteria	Points (out of 20)	Comments
Presentation	**2**	
Overall Presentation	0.75	Cover page Physical Presentation Slides or not Resume Table Graphs with comparables info (0.5 if 3 out of 4, otherwise 0.25 - 0.75 to best ones)
Sources	0.75	Bibliography Source Quotation Only bibliography 0.25. 0.5 relate bibliography with contents. 0.75 Sources management allright
Methodology and Source Relation	0.5	Details of methodology - SUBJECTIVE - distinguish between groups
Q1: Company Identification	**8**	
Correct Identification of Industries	3	0.75 per industry
Justification with BS data	2	0.5 per industry
Justification with IS data	2	0.5 per industry
Justification with Industry averages	1	0.25 per industry
Q2: Activity ratios	**3**	
Ratio computation/interpration	1	Correct calulation and explanation of the ratios full points
Overall Assessment	0.5	General assessment of the ratios calculated
Link to previously defined industries	1.5	Specific assessment of results linked to industries
Q3: Operating risk	**3.5**	
Ratio computation/interpration	1	Correct calulation and explanation of the ratios full points
Overall Assessment	0.5	General assessment of the ratios calculated
Fixed cost separation	0.5	Mentions necessity of separating operative variable and fixed costs and justifies choice
Link to previously defined industries	1.5	Specific assessment of results linked to industries
Q4: ROA	**3.5**	
Ratio computation/interpration	1.5	Correct calulation of assets turnover 0.5; calculation and explanation of the other ratios 1.0
Overall Assessment	0.5	General assessment of the ratios calculated
Link to previously defined industries	1.5	Specific assessment of results linked to industries

Support Slides:





Matching the companies to industries: Personal Goods (Cosmetics)

Marketing & Sales Expenses	• 33% of operating expenses • Justification: Marketing&Sales efforts necessary to build brand value and push products into highly competitive market
Gross Sales Margin	• 63% of net sales • Justification: typical mark-up on product cost in this industry
Inventories	• 4% of total assets • Justification: second highest share of the four industries analyzed, ensuring the availability of their products to customers is within the core business of the cosmetics industry

Matching the companies to industries: Retail (Pharmaceuticals & Drugstore)

Inventories	• 33% of total assets • Justification: retail companies need to have sufficient merchandise on stock to meet customer demands
Gross Profit Margin	• 29% of net sales • Justification: high product development costs, tough regulatory framework, difficulties to increase margins by raising prices for moral reasons and competitiveness of the market
Debt to Equity	• Debt-to-Equity ratio: 65% • Justification: not a lot of debt required because stores are usually rented, not owned, and there is no need for heavy machinery in retailing

Matching the companies to industries: Telecommunications

Cost of Service

- 44% of net sales
- Justification: delivery of the service (allowing customers to use the network) does not produce high costs

Inventories

- 0% of total assets
- Justification: "product" sold is the service of using the company's network, so no inventories needed

Activity Ratios

Financial Ratio	Calculation	Interpretation
Days Sales Inventories	$\frac{\text{Average Inventory}}{\frac{\text{COGS}}{365}} = \frac{365}{\text{Inventory Turnover}}$	Measures how long it takes a company to convert inventories into sales
Av. Collection Period	$\frac{\text{Av. Accounts Receivable}}{\text{Sales per day}} = \frac{365}{\text{Receivables Turnover}}$	Measures the amount of it takes a company to collect its payments from sales on credit
Av. Payment Period	$\frac{\text{Av. Payment Period}}{\text{Sales per day}} = \frac{365}{\text{Payables Turnover}}$	Indicator of a company's performance in paying their suppliers
Cash Conversion Cycle	DSI + ACP - APP	Number of days it takes a business to convert its production inputs into cash receipts

Operating Risk Ratios

Financial Ratio	Calculation	Interpretation
Break-even point % of Sales	Fixed Costs / Gross Sales Margin	Measures the % of actual sales a company needs to achieve to cover ist fixed costs
Margin of Safety	Actual Sales - BEP	Measures the % of sales above break-even point
Degree of Operating leverage	Gross Sales Margin / EBIT	Measures the impact a given change in sales has on net operating income (EBIT)

Return on Assets

Effect of Fixed Costs		Return on Sales		Assets turnover
• EBIT / GSM • How much do fixed costs impact profitability	X	• GSM / Sales • How much profit is generated per monetary unit of sales	X	• Sales / Assets • Amount of sales generated per monetary unit of assets

= Return on Assets

- indicator of a company's profitability relative to its total assets and gives insight into how efficiently assets are used to generate earnings quelle

Reference List / Suggested Readings

Gibson, Charles H. 2013. **Financial Statement Analysis**. 13th ed. Boston: Cengage Learning.

Subramanyam, K., and Wild, John. 2009. *Financial Statement Analysis*. 10th ed. New York: McGraw-Hill.

Wahlen, James; Baginski, Stephen and Bradshaw, Mark. 2011. *Financial Reporting, Financial Statement Analysis, and Valuation: A Strategic Perspective*. Boston: Cengage Learning.